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AN 96:544888 SCISEARCH

GA The Genuine Article (R) Number: UX582

TI AFRICAN-GREEN MONKEY KIDNEY (VERO) CELLS PROVIDE AN ALTERNATIVE HOST-CELL SYSTEM FOR **INFLUENZA**-A AND **INFLUENZA**-B VIRUSES

AU GOVORKOVA E A; MURTI G; MEIGNIER B; DETAISNE C; WEBSTER R G (Reprint)

CS ST JUDE CHILDRENS HOSP, DEPT VIROL & MOLEC BIOL, 332 N LAUDERDALE ST, MEMPHIS, TN, 38105 (Reprint); ST JUDE CHILDRENS HOSP, DEPT VIROL & MOLEC BIOL, MEMPHIS, TN, 38105; DI IVANOVSKII INST VIROL, MOSCOW 123098, RUSSIA; PASTEUR MERIEUX, F-69280 MARCY LETOILE, FRANCE; UNIV TENNESSEE, DEPT PATHOL, MEMPHIS, TN, 38163

CYA USA; RUSSIA; FRANCE

SO JOURNAL OF VIROLOGY, (**AUG 1996**) Vol. 70, No. 8, pp. 5519-5524. ISSN: 0022-538X.

DT Article; Journal

FS LIFE

LA ENGLISH

REC Reference Count: 32

AB The preparation of live, attenuated human **influenza** virus vaccines and of large quantities of inactivated vaccines after the emergence or reemergence of a pandemic **influenza** virus will require an alternative host cell system, because embryonated chicken eggs will likely be insufficient and suboptimal. Preliminary studies indicated that an African green monkey kidney cell line (Vero) is a suitable system for the primary isolation and cultivation of **influenza** A viruses (E. A. Govorkova, N. V. Kaverin, L. V. Gubareva, B. Meignier, and R. G. Webster, J. Infect. Dis. 172:250-253, 1995). We now demonstrate for the first time that Vero cells are suitable for isolation and productive replication of **influenza** B viruses and determine the biological and genetic properties of both **influenza** A and B viruses in Vero cells; additionally, we characterize the receptors on Vero cells compared,vith those on **Madin-Darby canine kidney** (MDCK) cells. Sequence analysis indicated that the hemagglutinin of Vero cell-derived **influenza** B viruses was identical to that of MDCK-grown counterparts but differed from that of egg-grown viruses at amino acid positions 196 to 198. Fluorescence-activated cell sorting analysis showed that although Vero cells possess predominantly alpha 2,3 galactose-linked sialic acid, they are fully susceptible to infection with either human **influenza** A or B viruses. Moreover, all virus-specific polypeptides were synthesized in the same proportions in Vero cells as in MDCK cells. Electron microscopic and immunofluorescence studies confirmed that infected Vero cells undergo the same morphological changes as do other polarized epithelial cells. Taken together, these results indicate that Vero cell lines could serve as an alternative host system for the cultivation of **influenza** A and B viruses, providing adequate quantities of either virus to meet the vaccine

*Computer-Aided Design
Dogs
Kidney Neoplasms
*L-Lactate Dehydrogenase: ME, metabolism
Lung Neoplasms
Rats
Software
Tumor Cells, Cultured
Volatilization
CN 0 (Anesthetics, Inhalation); EC 1.1.1.27 (L-Lactate Dehydrogenase)

L4 ANSWER 15 OF 17 MEDLINE on STN
AN 93055224 MEDLINE
DN PubMed ID: 1331151
TI Enhanced detection of respiratory viruses using the shell vial technique and monoclonal antibodies.
AU Lee S H; Boutilier J E; MacDonald M A; Forward K R
CS Department of Microbiology, Victoria General Hospital, Halifax, Nova Scotia, Canada.
SO Journal of virological methods, (1992 Sep) 39 (1-2) 39-46.
Journal code: 8005839. ISSN: 0166-0934.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199212
ED Entered STN: 19930122
Last Updated on STN: 19970203
Entered Medline: 19921203
AB The shell vial technique using **A549** and **MDCK** cells, coupled with the use of Bartels respiratory viral monoclonal antibodies, was evaluated initially for the detection of 28 previously isolated respiratory viruses. All viruses were recovered and correctly identified. The shell vial-monoclonal antibody technique was then evaluated for virus isolation from 338 respiratory specimens and compared with the conventional tube method. Both methods gave rise to a total of 83 virus isolates. Of these isolates, 68 (20.1%) were isolated and identified by the shell vial-monoclonal method; 60 (17.8%) were culture-positive by the conventional tube method; forty-five (13.3%) were positive by both methods. The shell vial-monoclonal antibody method yielded 12 isolates of influenza A, two isolates of parainfluenza type 3 and one each of parainfluenza types 1 and 3, which were missed by the conventional tube method, indicating the superior sensitivity and specificity of the shell vial-monoclonal antibody method (Chi-square analysis, P = 0.001) for the detection of these viruses. Of the 50 RSV isolates, 29 were detected by both methods and there were 21 discrepancies between the two methods. The shell vial-monoclonal antibody method also improved the turn-around time for the respiratory virus groups.
CT Check Tags: Human
Adenoviruses, Human: IM, immunology
Adenoviruses, Human: IP, isolation & purification
Animals
*Antibodies, Monoclonal
Cell Line
Dogs
Evaluation Studies
Influenza A Virus,

d his

(FILE 'HOME' ENTERED AT 14:23:11 ON 22 DEC 2004)

FILE 'MEDLINE' ENTERED AT 14:23:19 ON 22 DEC 2004

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L1          2115 S MADIN-DARBY CANINE KIDNEY
L2           243 S L1 AND INFLUENZA
L3             4 S L1 AND RSV
L4        423547 S 1997>PY>1995
L5             8 S L2 AND L4
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FILE 'SCISEARCH' ENTERED AT 14:30:38 ON 22 DEC 2004

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L6           195 S L2
L7            10 S L4 AND L6
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AN 1998:754949 CAPLUS
DN 130:152470
ED Entered STN: 02 Dec 1998
TI Cell lines of pulmonary and non-pulmonary origin as tools to study the effects of house dust mite proteinases on the regulation of epithelial permeability
AU Winton, H. L.; Wan, H.; Cannell, M. B.; Gruenert, D. C.; Thompson, P. J.; Garrod, D. R.; Stewart, G. A.; Robinson, C.
CS Department of Pharmacology & Clinical Pharmacology, St George's Hospital Medical School, London, SW17 0RE, UK
SO Clinical and Experimental Allergy (1998), 28(10), 1273-1285
CODEN: CLEAEN; ISSN: 0954-7894
PB Blackwell Science Ltd.
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Allergenic and non-allergenic proteinases from house dust mites (HDM) cause loss of adhesion between airway epithelial cells that may result in a loss of functional cohesion between the cells and thus assist in allergen presentation. Improved cellular assay systems are needed to ascertain the mechanisms involved. The authors surveyed a series of epithelial cell lines (Calu-3, 16HBE14o-, NCI-**H292** and A549 from human airways, and **MDCK** from dog kidney) and established their utility for studies of the effects of HDM proteinases from D. pteronyssinus on epithelial permeability. In addition, the authors developed an improved method for measuring changes in epithelial permeability induced by HDM proteinases and other provocants. The permeability of epithelial monolayer cultures to mannitol was calculated from measurements of clearance using a technique that permits math. estimation and reduction of non-cellular diffusional constraints. Permeability was studied under control conditions and after perturbation of monolayers with HDM proteinases (separated into serine- and cysteine-proteinase classes) or chelation of extracellular Ca2+. Fluorescent antibody staining was used to investigate whether the cells expressed tight junctions (staining of ZO-1), desmosomes (staining of desmoplakin) and zonulae adherentes (staining of E-cadherin). The Calu-3 line was identified as an airway cell line that expressed functional tight junctions, desmosomes and zonulae adherentes. Calu-3 monolayers exhibited a low clearance and permeability to mannitol, similar to that seen in the extensively characterized **MDCK** cell line. Clearance and permeability were significantly increased by treatment with either HDM proteinase fraction or by calcium chelation. 16HBE14o- cells also had a low permeability to mannitol under control conditions and expressed a similar repertoire of functional proteins from major intercellular junctions. In contrast, NCI-**H292** and A549 cell lines were functionally deficient in tight junctions, although they did express desmosomes and zonulae adherentes to a greater extent. Epithelial permeability was a more appropriate and sensitive index of epithelial perturbation than was tracer clearance. These results suggest that the Calu-3 and 16HBE14o- cell lines are useful tools in studying the mechanism of HDM proteinases on airway epithelial cell function. HDM proteinases of both cysteine and serine mechanistic classes were found to perturb epithelial adhesion and function.
ST house dust mite proteinase airway epithelium permeability
IT Animal cell line
(16HBE14o-; house dust mite proteinase effects on permeability of airway epithelium cell lines)
IT Animal cell line
(Calu-3; house dust mite proteinase effects on permeability of airway epithelium cell lines)

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d his

     (FILE 'HOME' ENTERED AT 08:05:27 ON 22 DEC 2004)

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L3           125 S H292
L4            17 S L1 AND L2
L5             1 S L1 AND L3
L6             1 S L1 AND L2 AND L3

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L7             5 S L1 AND L3
L8            45 S L1 AND L2
L9             1 S L1 AND L2 AND L3

     FILE 'CAPLUS' ENTERED AT 08:20:14 ON 22 DEC 2004
L10            4 S L1 AND L3

     FILE 'MEDLINE' ENTERED AT 08:22:39 ON 22 DEC 2004

     FILE 'SCISEARCH' ENTERED AT 08:23:12 ON 22 DEC 2004
L11           19 S L1 AND L2
L12            1 S L1 AND L3

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=> d his

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     FILE 'MEDLINE' ENTERED AT 13:42:29 ON 22 DEC 2004
L1          2115 S MADIN-DARBY CANINE KIDNEY
L2             6 S L1 AND A549
L3             0 S L1 AND H292
L4             0 S CCL-1848
L5            56 S  HUMAN LUNG EPITHELIAL CELL LINE
L6             1 S L5 AND L1
L7             0 S L5 AND MDCK
L8             1 S MDCK AND H292

     FILE 'BIOSIS' ENTERED AT 13:50:13 ON 22 DEC 2004
L9             0 S L1 AND L5
L10           23 S L1 AND A549
L11            3 S L1 AND H292

     FILE 'MEDLINE' ENTERED AT 13:53:25 ON 22 DEC 2004
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☐	L10	Madin-Darby canine kidney	10
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☐	L8	Madin-Darby canine kidney and RSV.clm.	4
☐	L7	Madin-Darby canine kidney.clm.	7
☐	L6	Madin-Darby canine kidney and influenza.clm.	48
☐	L5	Madin-Darby canine kidney and influenza	109
☐	L4	Madin-Darby canine kidney and RSV	33
☐	L3	Madin-Darby canine kidney	263
☐	L2	H292.clm.	7
☐	L1	H292	53

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1: Lee SH, Boutilier JE, MacDonald MA, Forward KR. Related Articles, Links

Enhanced detection of respiratory viruses using the shell vial technique and monoclonal antibodies.
J Virol Methods. 1992 Sep;39(1-2):39-46.
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☐	L5	Madin-Darby canine kidney and influenza	109
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☐ 1. Document ID: US 6573080 B2

L2: Entry 1 of 4 File: USPT Jun 3, 2003

US-PAT-NO: 6573080
DOCUMENT-IDENTIFIER: US 6573080 B2

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: June 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/235.1; 435/325, 435/5, 435/6, 435/8

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 2. Document ID: US 6406842 B2

L2: Entry 2 of 4 File: USPT Jun 18, 2002

US-PAT-NO: 6406842
DOCUMENT-IDENTIFIER: US 6406842 B2

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/5; 435/235.1, 435/325, 435/8

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 3. Document ID: US 6376172 B1

L2: Entry 3 of 4 File: USPT Apr 23, 2002

US-PAT-NO: 6376172
DOCUMENT-IDENTIFIER: US 6376172 B1

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/5; 435/235.1, 435/325, 435/8

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw. D

☐ 4. Document ID: US 6280928 B1

L2: Entry 4 of 4 File: USPT Aug 28, 2001

US-PAT-NO: 6280928
DOCUMENT-IDENTIFIER: US 6280928 B1

TITLE: Mixed cell diagnostic systems

DATE-ISSUED: August 28, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Scholl; David R.	Athens	OH		
Huang; Yung T.	Richmond Heights	OH		
Goodrum; Patricia Gail Ray	Athens	OH		

US-CL-CURRENT: 435/5; 435/235.1, 435/325, 435/8

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